

**Listing of Claims:**

1. (currently amended) In a decoder having one or more branch metric units for calculating branch metric values, a method for performing normalization comprising:

if a specified normalization condition is met, subtracting adding a normalization amount from to a branch metric value at each of said branch metric units to produce a normalized branch metric value.

2. (original) The method as in claim 1 wherein said specified normalization condition is that a plurality of state metrics are above a threshold value.

3. (original) The method as in claim 1 further comprising adding said normalized branch metric value to a plurality of stored state metric values.

4. (original) The method as in claim 3 wherein said state metric values are stored in a plurality of accumulators.

5. (original) The method as in claim 1 wherein said branch metric calculations are Viterbi branch metric calculations.

6. (original) The method as in claim 3 further comprising:

if a second specified normalization condition is met, adding a second normalization amount to branch metric calculations performed by each said one or more branch metric units to produce a second normalized branch metric value.

7. (original) The method as in claim 6 wherein said second specified normalization condition is that a plurality of state metrics are above a second threshold value.

8-12. (canceled).

13. (original) An apparatus comprising:

normalization logic to generate a normalization signal responsive to a specified normalization condition; and  
a branch metric unit to subtract a normalization amount from a branch metric value responsive to said normalization signal.

14. (original) The apparatus as in claim 13 wherein said specified normalization condition is that a plurality of state metric values are above a threshold value.

15. (original) The apparatus as in claim 13 further comprising: an adder to add said normalized branch metric value to a plurality of stored state metric values.

16. (original) The apparatus as in claim 15 further comprising: a plurality of accumulators for storing said state metric values.

17. (original) The apparatus as in claim 13 wherein said branch metric value is a Viterbi branch metric value.

18. (original) The apparatus as in claim 13 wherein said normalization logic generates a second normalization signal responsive to a second specified normalization condition, and wherein said branch metric unit subtracts a second normalization amount from said branch metric value responsive to said second normalization signal.

19. (original) The apparatus as in claim 18 wherein said second specified normalization condition is that a plurality of state metric values are above a second threshold value.

20. (original) A machine-readable medium having code stored thereon which defines an integrated circuit (IC), said IC comprising:

normalization logic to generate a normalization signal responsive to a specified normalization condition; and

a branch metric unit to subtract a normalization amount from a branch metric value responsive to said normalization signal.

21. (original) The machine-readable medium as in claim 20 wherein said specified normalization condition is that a plurality of state metric values are above a threshold value.

22. (original) The machine-readable medium as in claim 20 wherein said IC further comprises:

an adder to add said normalized branch metric value to a plurality of stored state metric values.

23. (original) The machine-readable medium as in claim 22 wherein said IC further comprises:

a plurality of accumulators for storing said state metric values.

24. (original) The machine-readable medium as in claim 20 wherein said branch metric value is a Viterbi branch metric value.

25. (original) The machine-readable medium as in claim 20 wherein said normalization logic generates a second normalization signal responsive to a second specified normalization condition, and wherein said branch metric unit subtracts a second normalization amount from said branch metric value responsive to said second normalization signal.

26. (currently amended) The machine-readable medium as in claim 25 18 wherein said second specified normalization condition is that a plurality of state metric values are above a second threshold value.